

Epidemiology Alert February 2009

2009 Influenza

- **Introduction** –Yearly vaccination remains the primary strategy to reduce influenza infections and their associated complications. The 2008-09 vaccine is a good match for viruses circulating at the present time, which includes influenza A, subtypes H1N1 and H3N2, and influenza B. The CDC has reported nearly 90% resistance among subtype H1N1 viruses to oseltamivir (Tamiflu). Presently, Douglas County has seen sporadic activity; however, the influenza A, subtype H1N1, is among the circulating viruses. This document will provide guidelines for diagnosing and treating individuals with symptoms of influenza.
- **Anti-Influenza Therapy** – A decision to treat with antiviral therapy requires that healthcare providers make a reasonably definitive diagnosis of influenza or choose to treat empirically when the probability of influenza is above a certain threshold. Consider:
 - ◆ **Epidemiology** – Is influenza in the community? Call 444-7214 for the weekly DCHD email or see <http://www.douglascountyhealth.com/disease/currentfluseason.pdf> for local influenza activity.
 - ◆ **Clinical Diagnosis** –Among adolescents and adults, acute respiratory illness with abrupt onset of fever (>37.8C/100F) and early cough has a positive predictive value for influenza of > 70% if influenza is in the community.¹ For patients with acute cardiopulmonary illness requiring hospital admission during influenza season, consider testing and treatment for influenza. In the elderly, headache and significant fatigue are key features; atypical presentations include acute-onset confusion, gait instability, and falls.
 - ◆ **Laboratory Tests** –Respiratory viral testing in **PEAK** influenza season (www.thepathologycenter.org):
- ✓ **Rapid Kit Test:** Test available 24 hours daily; results available in 30 to 60 minutes. If rapid kit test desired, *must call* laboratory to order.
 - ◆ Sensitivity depends on age of patient:
 - < Five years old: sensitivity is 84%
 - Six to 20 years old: sensitivity is 56%
 - 21 to 50 years old: sensitivity is 43%
 - > 50 years old: sensitivity is 33%
 - ◆ Hospitalized patients with negative rapid tests will have a Respiratory Viral Panel (RVP) performed.
- ✓ **Rapid DFA Test:** Test can be ordered 24 hours daily; results available in 2 hours if specimen received by 2:00 p.m.; after 2:00 p.m., results available the following morning.
 - ◆ Sensitivity is 90%
 - ◆ Order: “**Influenza screen A&B-RVP culture if negative**” for hospitalized patients; the negative DFA test result will reflex to culture. Droplet precautions will be ordered automatically in Cerner.
- ✓ **Viral Culture (RVP):** RVP is currently the “Gold Standard.” Sensitivity is assumed to be 100%; 50% of positives are identified at 24 hours; remaining positives at 48 hours; final negatives at 4 days.
- ✓ **Please Note:** Best specimen is a nasopharyngeal aspirate/wash obtained within 3 days of symptoms. Testing of throat or nose swabs may result in reduction of sensitivity.
- ◆ **Benefits of Therapy** –When initiated promptly, antiviral therapy can shorten the duration of influenza symptoms by one to three days. The benefit is greatest when given within the first 24 to 30 hours and in patients with fever at presentation. Little or no benefit has been demonstrated when treatment is initiated two days or more after the onset of uncomplicated influenza.

¹Call SA, et al. Does this Patient have Influenza? JAMA 2005; 293:987–997.

- **Recommendations for Selection of Antiviral Treatment** – The CDC issued new recommendations for the use of influenza antiviral medications on December 19, 2008.

Rapid Antigen/ Lab Test	Predominate Virus in Community	Preferred Medication	Alternate Medications
Not done or negative, but clinical suspicion for influenza	H1N1 or unknown	Zanamivir	Oseltamivir + Rimantadine or Oseltamivir + Amantadine
Not done or negative, but clinical suspicion for influenza	H3N2 or B	Oseltamivir or Zanamivir	None
Positive A	H1N1 or unknown	Zanamivir	Oseltamivir + Rimantadine or Oseltamivir + Amantadine
Positive A	H3N2	Oseltamivir or Zanamivir	None
Positive B	Any	Oseltamivir or Zanamivir	None
Rapid Antigen Positive but cannot distinguish b/w A and B antigens	H1N1 or unknown	Zanamivir	Oseltamivir + Rimantadine or Oseltamivir + Amantadine
Rapid Antigen Positive but cannot distinguish b/w A and B antigens	H3N2 or B	Oseltamivir or Zanamivir	None

➤ **Antiviral Drugs and Dosage:**

Antiviral	Treatment/ Prophylaxis	Age 13 – 64	Age ≥ 65	Comments
Zanamivir	Treatment	2 inhalations bid x 5 days	2 inhalations bid x 5 days	COPD/Asthma-Not recommended
	Prophylaxis	2 inhalations daily	2 inhalations daily	
Oseltamivir	Treatment	75mg po bid x 5 days	75mg po bid x5 days	CrCl<30 daily
	Prophylaxis	75mg po daily	75mg po daily	CrCl<30 qod
Rimantadine	Treatment	100mg po bid	100mg po daily	CrCl<10 daily
	Prophylaxis	100mg po bid	100mg po daily	CrCl<10 daily
Amantadine	Treatment	100mg po bid	100mg po daily	CrCl 30-50 100mg bid x1 day, then 100mg daily CrCl 15-29 100mg bid x1 day, then 100mg qod
	Prophylaxis	100mg po bid	100mg po daily	CrCl 30-50 100mg bid x1 day, then 100mg daily CrCl 15-29 100mg bid x1 day, then 100mg qod

Zanamivir = Relenza®

Oseltamivir=Tamiflu®

Rimantadine=Flumadine®.

References:

- Methodist Health System ERNIE Home Page→” Influenza Season Alert” on left toolbar→Complete source for full references
- Douglas County Health Department Flu Activity and Surveillance: <http://www.douglascountyhealth.com/disease/currentfluseason.pdf>
- Nebraska Flu Activity and Surveillance: <http://www.hhs.state.ne.us/flu/WeeklyReport.pdf>
- National Flu Activity and Surveillance: <http://www.cdc.gov/flu/weekly/>
- The CDCs “Interim Recommendations for the Use of Influenza Antiviral Medications”:
<http://www.cdc.gov/flu/professionals/antivirals/recommendations.htm>
- The Pathology Center: <http://www.thepathologycenter.org>
- <http://www.Relenza.com/inhaler-step-by-step.html>
- <http://www.bestcare.org> → For Providers → Resources → Newsletters → Pharmacy & Therapeutics and Epidemiology Alerts

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